

U.S. Patent Appln No. 10/668,750  
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**ABSTRACT**

A system and method is provided for assessing the degree of systemic perfusion in a patient. The system includes a surface perfusion pressure monitor and a blood pressure monitor. The surface perfusion pressure monitor may include a laser Doppler sensor or a photoplethysmograph. A surface perfusion pressure index, or alternatively, an optical plethysmography index is derived from the surface perfusion pressure measurement and the blood pressure measurement to allow for assessment of the systemic perfusion failure. In an alternative embodiment a blood flow sensor may be added to the system and measures sublingual  $\text{PCO}_2$ , and  $\text{SaO}_2$  adjacent a mucosal surface accessible by a mouth or nose and connecting with the gastrointestinal tract or upper respiratory/digestive tract of a patient. A pH sensor may be used in combination with the blood flow determination.